NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
HOT MIX ASPHALT QUALITY CONTROL TEST WORKSHEET

Type Mix:	[1]	QC Sample Date: [4]	JMF Pba: [7]	MD Gb: [10]
Plant Location:	[2]	QC Sample No.: [5]	JMF Gse: [8]	Calculated Gse: [11]
Plant Cert No:	[3]	JMF No.: [6]	JMF Gsb: [9]	Corrected Gsb: [12]

*(Vc=.903g/cm3) Rc(value on sheets)g/cm3=

Dry & Pan Weights

Dry & Pan Weights		Pan Wt.
Agg Wt after Ignition	[13]	<0.2% of
Dry Wt after Wash	[14]	Dry Wt.
Pan Weight	[15]	After Sieving?
% Loss from Sieving	[16]	[17]

Furnace Weights		Furnace
Basket + Mix	[18]	Scale
Basket Wt.	[19]	Within
Total Mix Wt.	[20]	5.0 grams?
Furnace Readout	[21]	[22]

% Binder (Pb)	
JMF %Binder	[23]
% Binder from Burn	[24]

Moisture Content	
Mix Sample Weight	[25]
Mix Dry Weight	[26]
Mix % Moisture	[27]

VMA	[46]
VFA	[47]
%Gmm@Nini	[48]
P0.075 / Pbe Ratio	[49]

Gradation Data (all weights are after burn weights)

SIEVE	Accumulated Weight	Percent Retained	TOTAL % PASSING			JMF
37.5 mm	[28]	[29]	[30]			[33]
25.0 mm						
19.0 mm						
12.5 mm						
9.5 mm						
4.75 mm						
2.36 mm						
1.18 mm						
.600 mm						
.300 mm						
.150.mm						
.075 mm						
PAN				Constant =		[34]

Hot Bin Weights	#1	#2	#3	#4	#5
(Batch Plant)	[35]				
Cold Feed(materials)	[36]				
Percentages	[37]				

Gmm (CoreLok) Test Data

A. Weight of Empty Bag	[38]
B. Weight of Rubber Sheets	[39]
C. Weight of Sample in air	[40]
D. Weight of Bag + Sample in Water	[41]
E. Total Volume (A+B+C)-D	[42]
F. Bag & Sheet Volume (A/Vc)+(B/Rc)*	[43]
G. Sample Volume (E-F)	[44]
H. Gmm (C/G)	[45]

Gyratory Compacted Specimen Test Data

| Specimen Number | A) Height @ Nini | B) Height @ Ndes | C) Dry In Air | D) SSD In Air | E) Weight In Water | F) Gmm @ Ndes' | G) Gmb @ Ndes' | SAMPLE VOLUME | | J) Correction Factor | K) Gmb @Nini | L) Gmb @Nini | M) Gmm Corelok Gravity | N) VTM @' Ndes |
								H) '@' Nini	I) '@ Ndes		Estimated	Corrected		
	Measured	Measured	Measured	Measured	Measured	C / (D-E)	C / I	Ax17.6715	Bx17.6715	F / G	C / H	J x K	Measured	(M-F) / M x 100
1	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
2														
3														
AVERAGES						[64]						[65]		[66]

*NOTE: BY PROVIDING THIS DATA UNDER MY SIGNATURE AND/OR HICAMS CERTIFICATION NUMBER, I
ATTEST TO THE ACCURACY AND VALIDITY OF THE TEST DATA CONTAINED ON THIS FORM AND CERTIFY
THAT NO DELIBERATE MISREPRESENTATION OF TEST RESULTS, IN ANY MANNER, HAS OCCURRED

[67]

* PRINT NAME LEGIBLY w/ HICAMS #

[68]

QA/QC TECHNICIANS SIGNATURE

GENERAL NOTE: This form may be used by either QA or QC personnel when determining binder content, recovered aggregate gradations, maximum specific gravity <u>by CoreLok Test Method</u>, and Gyratory test data for mix samples compacted to N$_{des}$ gyrations. QC is required to attach the following to this QA/QC Form:

        1) a copy of the weigh ticket for the mix sample load; and

        2) the ignition furnace printout for the binder content test.

This form, with these attachments, shall be maintained in the appropriate QC files for period of three (3) years after completion of the form. QA shall maintain their QA/QC-1 forms indefinitely unless permission is given otherwise.

1.   Type mix being produced and tested; i.e, SF9.5A, I19.0C, etc.
2.   Actual location of plant site (Site shown on JMF).
3.   Current asphalt plant HiCAMS certification number.
4.   Date mix is tested by QA/QC personnel.
5.   Consecutive QC sample number, i.e., 09-1, 09-2, 09-3, etc.
6.   Actual Job Mix Formula Number of mix tested.
8.   Percent Absorption (P$_{ba}$) value from the Job Mix Formula.
8.   Effective Specific Gravity (G$_{se}$) value from the Job Mix Formula.
9.   Bulk Specific Gravity (G$_{sb}$) value from the Job Mix Formula.
10.   Binder specific gravity from actual mix design being used.
11.   Calculated effective specific gravity from the Rice Test from this mix sample. See Section 7.16 for formula.
12.   Corrected bulk specific gravity. See Section 7.16 Step 1 for formula.
13.   Weight of recovered aggregate after ignition furnace burn.
14.   Weight of dry recovered aggregate after washing aggregate sample.
15.   Weight of material in pan after sieving (See PAN weight under Block 28).
16.   Percent loss after sieving. See Section 7.9 for formula.
17.   YES if No. 16 above is 0.2% or less. NO if it exceeds 0.2%.
18.   Weight of ignition furnace basket + mix.
19   Weight of ignition furnace basket.
20.   No. 18 minus No. 19 = Total weight of mix.
21.   Combined weight of mix sample and ignition furnace basket shown on ignition furnace readout.
22.   YES if weight difference between Nos. 18 and 21 is within 5.0 grams. No if the difference is not w/in 5.0 grams.
23.   Percent binder from Job Mix Formula being produced.
24.   Percent binder from ignition furnace burn ticket.

<u>Note</u>: Nos. 25, 26, and 27, to be used when checking moisture in the completed mix when required.

25.   Mix sample weight before drying.
26.   Mix sample weight after drying. (Mix should be dried at 325ºF ±25ºF to a constant weight in oven.)
27.   % Moisture in Mix.
      (Original mix sample weight (25) – Dry mix sample weight (26)) ÷ Original mix sample weight (25) x 100)
28.   Accumulated weight of aggregate retained on each sieve/pan.
29.   Percent retained. Cumulative Wt. Retained ÷ (Pan Wt. + Wt. Loss from Washing) x 100.
      See Section 7.9 for formula and example calculation of constant.
30.   Total Percent passing [100 – % Retained (#29)].
31.   [ITEM DELETED]
32.   [ITEM DELETED]
33.   Target values for each sieve from JMF.
34.   Constant for computing percent retained (See Section 7.9 for formula and example calculation of constant).
35.   Actual aggregate weights pulled from each hot bin being used (Batch Plant Only).
36.   Type aggregate in each cold feed bin being used in mix; i.e., 78M, screenings, sand, etc.
37.   Actual percent aggregate from each cold feed bin being used in mix (nearest whole percentage).
38.   Weight of empty test sample bag.

39. Weight of rubber sheets.
40. Weight of mix sample in air.
41. Weight of bag plus mix sample in water.
42. Total volume (A+B+C) – (D).
43. Sample bag and rubber sheet volume (A/Vc) + (B/Rc).
44. Mix Sample Volume (E – F).
45. Maximum Specific Gravity [Specific Gravity of Sample to nearest 0.001 (C / G)].
46. Calculated VMA from test data (See calculation formula in Section 7.16).
47. Calculated VFA from test data (See calculation formula in Section 7.16).
48. Calculated % G_{mm}@ N_{ini} from test data (See calculation formula in Section 7.16).
49. Calculated $P_{0.075}/P_{be}$ Ratio from test data (See calculation formula in Section 7.16).
50. Height (mm) of Gyratory specimens at N_{ini} taken from computer printout.
51. Height (mm) of Gyratory specimens at N_{des} taken from computer printout.
52. Unsuspended dry weight of each Gyratory specimen to nearest 0.1 gram (x.x).
53. Unsuspended saturated surface dry weight of each Gyratory specimen to nearest 0.1 gram (x.x).
54. Suspended weight in 77 degree (F) water for 3-5 minutes for each Gyratory specimen to nearest 0.1 gram (x.x).
55. Bulk specific gravity of each specimen (G_{mb} @N_{des}, measured to nearest 0.001 (x.xxx).
56. Bulk Specific Gravity of each specimen (G_{mb} @N_{des}, estimated).
57. Sample volume @ N_{ini} expressed in cm^3.
58. Sample volume @ N_{des} expressed in cm^3.
59. Correction factor determined by dividing G_{mb}@N_{des} (measured) by G_{mb} @N_{des} (estimated). (Calculated to 0.001)
60. Bulk Specific Gravity (G_{mb} @N_{ini} Estimated).
61. Bulk Specific Gravity (G_{mb} @N_{ini} Corrected) Correction Factor x Gmb @Nini(estimated).
62. G_{mm} (Rice Test specific gravity) from blank 42, or blank 46 if dry back is required.
63. Percent voids in total mix (VTM) from test data (See calculation formula in Section 7.16.2)
64. Average G_{mb} @ N_{des} [Total of specimen G_{mb} ÷ 3 (nearest 0.001)].
65. Average G_{mb} @ N_{ini} [Total of G_{mb} @ N_{ini} ÷3 (nearest 0.001)].
66. Average VTM @ N_{des} [Total of VTMs ÷3 (nearest 0.1%)] .
67. Printed name and HiCAMS certification number of QA/QC technician performing test.
68. Signature of QA/ QC technician performing test.